

Notice of Allowability

Application No.

10/081,866

Examiner

Davienne Monbleau

Applicant(s)

BUTLER ET AL.

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2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the response filed on 9/13/04.
2. ☒ The allowed claim(s) is/are 1-47.
3. ☒ The drawings filed on 22 February 2002 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 2/7/03; 6/2/03
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

**EXAMINER'S COMMENTS, AMENDMENT, AND STATEMENTS OF
REASONS FOR ALLOWANCE**

Election/Restrictions

Applicant's election without traverse of Group I in the reply filed on 9/13/04 is acknowledged. However, after further consideration, Examiner has decided to withdraw the previous election requirement. Therefore, all pending claims (Claims 1-47) will be examined on the merits.

Information Disclosure Statement

The IDS filed on 2/7/03 and 6/2/03 have been acknowledged and a signed copy of each PTO-1449 is attached herein.

Examiner's Amendment

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

Claim 6 line 1: insert - detector - after "said depth". (Examiner believes that this was unintentionally omitted.)

Allowable Subject Matter

Claims 1-47 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding Claims 1-10 and Claims 23-32, the cited prior of record does not teach or fairly suggest an alignment detector comprising, along with the other claimed features, one or more optical elements each aligned to receive a respective laser beam in said one or more laser beams, wherein said one or more optical elements are adapted to convert said one or more laser beams into a plurality of laser outputs.

Regarding Claims 11-17 and 33-42, the cited prior of record does not teach or fairly suggest a depth detector comprising, along with the other claimed features, one or more optical elements each aligned to receive a respective laser beam in said one or more laser beams, wherein said one or more optical elements are adapted to convert said one or more laser beams into one or more sets of laser outputs.

Regarding Claims 18-22 and 43-47, the cited prior of record does not teach or fairly suggest a level detector comprising, along with the other claimed features, one or more optical elements each aligned to receive a respective laser beam in said one or more laser beams, wherein said one or more optical elements are adapted to provide a set of laser planes.

The cited prior art of record (*Heintzeman*) teaches mounting a laser onto a drill to provide alignment, but does not teach providing more than one laser output. The cited prior art of record (*Olds*) also teaches that more than one laser source can be used to determine the alignment of a drill with respect to a mark on a work piece. However, although *Olds* teaches in column 3 lines 56-61 using optical lenses to convert a pencil beam from the laser to a projected fan beam, there is no teaching of an optical element to create more than one laser output. Lastly, the cited prior art of record (*Summerer*) teaches that a semiconductor wafer may have an alignment mark comprising two sets of parallel lines, wherein the sets are orthogonal to one another. However,

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Summerer does not teach that the alignment illumination beams (208 and 210) each converted into more than one beam via an optical element. (Regarding Claims 11-17 and 33-42, it is also important to note that “sets of laser outputs” requires that each set has more than one laser output: Merriam-Webster’s Collegiate Dictionary 10th Ed. definition 21 – a set is a “collection of elements”.)

The advantages of these features are in the specification on pages 1-4.

Conclusion

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Heintzeman (US 6,375,395) teaches a laser mounted on the casing of a drill such that the laser is in line with the bit and pointing in the reverse direction, which allows the laser to be used to align the drill bit with a mark or hole such that the drill bit is directly in line with the pre-existing mark.

Olds (US 5,741,096) teaches a line laser assisted alignment apparatus that uses two laser line generators to define a reference axis that is aligned to coincide with an axis of a drill bit or other rotational tool.

Summerer (US 6,537,836) teaches an optical system for scanning an alignment illumination comprising a pair of orthogonal lines impinging light of the surface of an alignment

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mark on a semiconductor wafer, wherein said alignment mark comprises two sets of parallel lines that are orthogonal to each other.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Davienne Monbleau whose telephone number is 571-272-1945.

The examiner can normally be reached on Mon-Fri 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Davienne Monbleau

DNM



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